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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER	
HARBECK, TIMOTHY M	

ART UNIT	PAPER NUMBER
3628	

DATE MAILED: 06/02/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/774,768	SEGAL ET AL.	
	Examiner	Art Unit	
	Timothy M. Harbeck	3628	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *03 March 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-22* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-22* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-7 and 11-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schmerken (Ivy Schmerken. "Real Liffe or virtual reality." Wall Street & Technology. New York: Jan 1997. Vol 15, Iss. 1; pg 70, 3 pages) in view of Tomasula (Dean Tomasula. "Virtual trading is virtually a reality." Wall Street & Technology. New York: Oct 1995. Vol.13, Iss. 10; pg 44, 3 pgs).

Re Claim 1: Schmerken discloses a method for displaying data representing the operation of an exchange comprising:

- Maintaining data representing a three dimensional model of said exchange trading areas, said model including surfaces (Page 2 paragraph 2; also see photograph at end of article)

Schmerken does not explicitly disclose

- Receiving and maintaining in a computer memory data representing exchange operations
- Generating a two-dimensional display representing a selected view of a model three dimensional model, said two dimensional display including perspective views of at least some of said surfaces of said models

Tomasula discloses a virtual trading method disclosing:

- Receiving and maintaining in a computer memory data representing exchange operations (page 2, paragraph 2 "Trader Interaction.")
- Generating a two-dimensional display representing a selected view of a model three dimensional model, said two dimensional display including perspective views of at least some of said surfaces of said models (Page 2, paragraph 10 "Flat reality.")

It would have been obvious to anyone of ordinary skill in the art at the time of invention to include the teachings of Tomasula to the disclosure of Schmerken so that a participant in the virtual reality system would not need to wear a "space suit, googles and gloves and be connected by a spider web of wires." This function of virtual reality is cumbersome and expensive and simply representing 3D images on a computer screen is much more simple and efficient.

Finally the references do not explicitly disclose the steps of:

- Generating alphanumeric images of selected data representing exchange operations; and
- Mapping said alphanumeric images onto selected ones of said perspective views

However it was notoriously well known in the art at the time of invention for trading floors to utilize alphanumeric images such as stock symbols and pricing information across a ticker board. Therefore it would have been obvious to anyone skilled in the ordinary art at the time of invention to map these "real" images from a

trading floor onto the virtual trading floor disclosed by Schmerken in view of Tomasula. One would be motivated to do this in order to reflect, as accurately as possible in a virtual world, the conditions of the real world environment. Furthermore, on any trading floor platform it is vital that traders have access to price quotes and other financial information, and therefore any method seeking to simulate a trading floor would be better served to provide this information.

Re Claim 2: Schmerken in view of Tomasula discloses the claimed method supra and Schmerken further discloses the step of changing said selected aspect view of said three dimensional model (page 2 paragraph 2 "move around and enter the levels of the pit. By swinging your head you can even view the ceiling and walls.")

Schmerken does not explicitly disclose

- Generating a further two-dimensional display representing said changed aspect view, said further two dimensional display including further perspective views of at least some of said surfaces of said model and;
- Mapping said alphanumeric images onto selected ones of said further perspective views in said further two dimensional display.

However as was discussed in the rejection of claim 1, Tomasula discloses the use of a computer screen to display 3-D virtual reality images and it would have been obvious then, that if the three-dimensional aspect view changed to have the two dimensional aspect view change as well. If this were not the case than the computer screen would essentially show a static snapshot image, not a dynamic environment, which is the intention of virtual reality. The same argument holds for the alphanumeric

images, such as a ticker displaying financial information. To be effective, a ticker cannot be a static shot since financial information changes instantaneously. Therefore it would have been obvious to map these images onto said further perspective views to more fully mimic the real trading floor environment.

Re Claim 3: Schmerken in view of Tomasula discloses the claimed method supra but the references do not explicitly disclose wherein portions of said two dimensional display are selectable, said selectable display portions being operable when selected for displaying further data correlated to said selectable display portions. However it was well known in the art to be able to select portions of a display on a computer screen to display further correlated data. For instance, Schmerken discloses the users can turn on videos and monitors (Page 2, paragraph 2). It would be obvious then to allow users to select these portions, such as a video monitor of the floor, and "zoom in" on this video monitor to view the corresponding data. Again video monitors with financial data and information are prevalent on a trading floor and therefore it would be obvious to include this information on any virtual representation of said floor in order to render the environment as accurately as possible.

Re Claim 4: Schmerken in view of Tomasula discloses the claimed method supra but the references do not explicitly disclose wherein at least a portion of said selectable display portions comprise said perspective aspect views, and wherein said further data is correlated to data represented by said alphanumeric images mapped onto said perspective aspect views. However as was discussed in the rejection of claim 3, Schmerken discloses that a user can select a monitor on the trading room floor to

either turn on or off or move (page 2, paragraph 3). It is well known in the art that these moitors on trading floors contain alphanumeric images relating to financial information, such as stock symbols and stock quotes. Therefore it would have been obvious to anyone of ordinary skill in the art at the time of invention to map said alphanumeric images onto the perspective aspect view (view of the monitor screen) in order to virtually reflect in accurate detail, the conditions of a real trading floor.

Re Claim 5: Schmerken discloses a method for displaying data representing the operation of an exchange having a trading area whereat selected securities are traded comprising:

- Maintaining data representing a three dimensional model of said exchange trading area (Page 2 paragraph 2; also see photograph at end of article)

Schmerken does not explicitly disclose

- Wherein said trading area includes a plurality of trading posts whereat selected securities are traded
- Receiving and maintaining in a computer memory data representing trading of said securities
- Generating a two dimensional display representing a selected aspect view of said three dimensional model, said selected aspect view including one or more of said model portions representing said trading posts, said model portions having selectable parts being

selectable and operative when selected to display further data from said computer memory correlated to said selected parts

It was well known in the art for a trading area to include trading posts where particular securities are bought and sold. For instance the New York Stock Exchange has 17 such trading posts. Therefore it would have been obvious to anyone of ordinary skill in the art at the time of invention to include, in a virtual reality rendering of a trading are, such trading posts for the sake of accuracy in the model. The purpose of a virtual reality is to graphically model, as accurately as possible, the conditions of particular environment. Without including trading posts in the modeling of a trading area, the model would be incomplete.

Tomasula discloses the steps of:

- Receiving and maintaining in a computer memory data representing trading of said securities (Page 2, paragraphs 4 "Interact with his fellow traders as if they were all on the same floor.")
- Generating a two dimensional display representing a selected aspect view of said three dimensional model, said selected aspect view including one or more of said model portions representing said trading posts (Page 2, Paragraph 10; two dimensional display would include all aspects of 3-D rendering of a trading area, including the trading posts)

It would have been obvious to anyone of ordinary skill in the art at the time of invention to include the teachings of Tomasula to the disclosure of Schmerken so that a

participant in the virtual reality system would not need to wear a "space suit, googles and gloves and be connected by a spider web of wires." This function of virtual reality is cumbersome and expensive and simply representing 3D images on a computer screen is much more simple and efficient.

The references do not explicitly disclose the step wherein said model portions having selectable parts being selectable and operative when selected to display further data from said computer memory correlated to said selected parts. However Schmerken does disclose certain model portions, such as videos and monitors, which are selectable by a user in order to display further data ("turn on the videos."). It was well known in the art at the time of invention for trading posts in a trading area to include such videos and monitors so that persons on a trading floor are provided with a continuous stream of information related to the corresponding security or market. Therefore it would have been obvious to anyone of ordinary skill to include this feature to the disclosure of Schmerken in view of Tomasula to allow a user to essentially zoom in on a particular monitor or screen in order to view further information associated with a particular trading post. In the virtual reality world, this would be the same as a trader simply viewing a particular monitor on the actual trading floor and would further enhance the virtual experience of the user.

Re Claim 6: Schmerken in view of Tomasula discloses the claimed method supra but does not explicitly disclose wherein said model portions representing said trading posts include surfaces and wherein said step of generating a two-dimensional display further comprises:

- Generating alphanumeric images relating to securities traded at a selected trading post and mapping said alphanumeric images into selected ones of said surfaces in said two-dimensional display, and wherein said surfaces being operative when selected to display further data correlated to said related securities.

However, as was discussed in claim 5 above, Schmerken discloses that a user in a virtual reality world can turn on video monitors that exist on the trading floor. Furthermore it was notoriously well known in the art at the time of invention for these video monitors to show alphanumeric images including stock symbols and price quotes. Therefore it would have been obvious to anyone of ordinary skill to map such alphanumeric images onto the surfaces of the virtual reality world because the goal on any virtual reality world is to mirror, with as much accuracy as possible, the "real" world. On a real trading floor these monitors show alphanumeric images, therefore in the virtual world, the monitors should display the same images. Furthermore, as Schmerken discloses, these monitors can be turned on and off in the virtual reality world, and are therefore "selectable" to display the further information on the surface of the monitor.

Re Claim 7: Schmerken in view of Tomasula discloses the claimed method supra and while not explicitly disclosing wherein said alphanumeric images comprise identification of said securities, as was discussed in claim 6 it was well known in the art that the monitors such as the ones disclosed by Schmerken (page 2, paragraph 2) display information such as a particular stock symbol and price quotes. Therefore it

would have been obvious to include this step to the disclosure of Schmerken in view of Tomasula so that a user on the virtual trading floor will know the security that is associated with a particular trading post.

Re Claims 11-17: Further system claims would have been obvious in order to perform the previously rejected method claims 1-7, respectively, and are therefore rejected using the same art and rationale.

Claims 8-10 and 18-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schmerken in view of Tomasula as applied to claim 5 and 15 above, and further in view of Marshall (US PAT 5,675,746). SL 5-23-06

Re Claim 8: Schmerken in view of Tomasula discloses the claimed method supra but the references do not explicitly disclose the step further comprising:

- Analyzing said data representing trading of said securities and identifying exceptional conditions relating thereto, generating image portions representing said exceptional conditions, and displaying said exceptional condition image portions in said two-dimensional display in correlation with display of model portions representing said trading posts at which said securities are traded.

Marshall discloses a virtual generator for use with financial information, wherein abstract financial information is represented by real world objects (metaphors) as part of the virtual reality world (Column 3, lines 35-63). Furthermore the method of Marshall allows the user to enter "exceptional" conditions, upon which the metaphors will be

displayed. It would have been obvious to anyone of ordinary skill in the art at the time of invention to include the teaching of Marshall to the disclosure of Schmerken in view of Tomasula, so that a user viewing a display can be alerted to a particular trend or sequence of events that has been defined as important. These alerts, in the form of images quickly and efficiently inform the user of important events and allow them to certain actions. Furthermore it would be obvious to display the corresponding images at the relevant trading post of the displayed trading area, which would provide the user with information as to the specific security to which the metaphor pertains.

Re Claim 9: Schmerken in view of Tomasula in view of Marshall discloses the claimed method supra and Marshall further discloses wherein said exceptional condition image portions are selectable and operative to display further data concerning said exceptional condition (Column 4, lines 44-47).

Re Claim 10: Schmerken in view of Tomasula discloses the claimed method supra but the references do not explicitly disclose the steps of:

- Monitoring data processing systems used in said exchange
- Identifying exceptional conditions in said data processing systems and the locations of said exchange effected by said exceptional conditions
- Generating image portions representing conditions of said data processing system and displaying said exceptional condition image portions in said two-dimensional display in correlation with said location of said exchange.

Marshall discloses the steps of

- Monitoring data processing systems used in said exchange (Column 4, lines 28-33)
- Identifying exceptional conditions in said data processing systems (Column 4, lines 39-41)
- Generating image portions representing conditions of said data processing system and displaying said exceptional condition image portions in said two-dimensional display (Column 4, lines 41-47)

It would have been obvious to anyone of ordinary skill in the art at the time of invention to include the teaching of Marshall to the disclosure of Schmerken in view of Tomasula, so that a user viewing a display can be alerted to a particular trend or sequence of events that has been defined as important. These alerts, in the form of images quickly and efficiently inform the user of important events and allow them to certain actions.

While the references do not explicitly disclose wherein these images are shown in correlation with the location of the exchange where the exceptional condition is happening, as has been discussed previously it is well known in the art for a trading floor to have trading posts where particular securities are traded. Therefore it would be obvious to place an alert about a particular security, at that particular securities trading post so that a user of the system can quickly determine location of the "exceptional condition," and move to that area to take action.

Re Claims 18-20: Further system claims would have been obvious in order to perform the previously rejected method claims 8-10, respectively, and are therefore rejected using the same art and rationale.

Re Claim 21: Schmerken in view of Tomasula in view of Marshall discloses the claimed system supra and Marshall further discloses wherein the computer system is further configured and programmed to receive and maintain in a computer memory real time and historical data representing trading of said securities (Column 4, lines 29-33).

Re Claim 22: Schmerken in view of Tomasula in view of Marshall discloses the claimed system supra and but the references do not explicitly disclose wherein the computer system is further configured and programmed to receive and maintain in a computer memory real time and historical data integrated from several sources representing trading of said securities and normalized market data. Marshall discloses wherein the computer system is further configured and programmed to receive and maintain in a computer memory real time and historical data representing trading of said securities (Column 4, lines 29-33), however not normalized market data. However the step of normalizing market data is notoriously well known in the art as a statistical adjustment for cyclical ups and downs in the economy. Therefore it would have been obvious to anyone of ordinary skill to include to normalized data to the system of Schmerken in view of Tomasula in view of Marshall so that the system is provided with typical financial statistics from which decisions and actions can be made.

Response to Arguments

Applicant's arguments with respect to claims 1-20 have been considered but are moot in view of the new ground(s) of rejection. The examiner has taken note of applicant's affidavit filed 12/20/2004, and issued the rejection in light of this document.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Timothy M. Harbeck whose telephone number is 571-272-8123. The examiner can normally be reached on M-F 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hyung S. Sough can be reached on 571-272-6799. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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